Scientific Visualization in High Speed Network Environments

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Abstract

In several cases,new visualization techniques have vastly increased the researcher's ability to analyze and comprehend data.Similarly, the role of networks in providing an efficient supercomputing environment have become more critical and continue to grow at a faster rate than the increase in the processing capabilities of supercomputers.A close relationship between scientific visualization and high-speed networks in providing an important link to support efficient supercomputing is identified.

The two technologies are driven by the increasing complexities and volume of supercomputer data.

The interaction of scientific visualization and high-speed networks in a Computational Fluid Dynamics simulation/visualization environment are given. Current capabilities supported by high speed networks, supercomputers, and high-performance graphics workstations at the Numerical Aerodynamic Simulation Facility (NAS) at NASA Ames Research Center are described. Applied research in providing a supercomputer visualization environment to support future computational requirements are summarized.

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Graphics from this paper:

- Table 6 Projected technical evolution of simulation/visualization environments